

DOES IT MATTER HOW MUCH OPEN? IMPACT IN LEARNING AND DEGREES OF OPENNESS

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IDRC Grant/ Subvention du CRDI: 107311-001-Research into Open Educational Resources for Development



Does it matter how much open? Impact in learning and degrees of openness

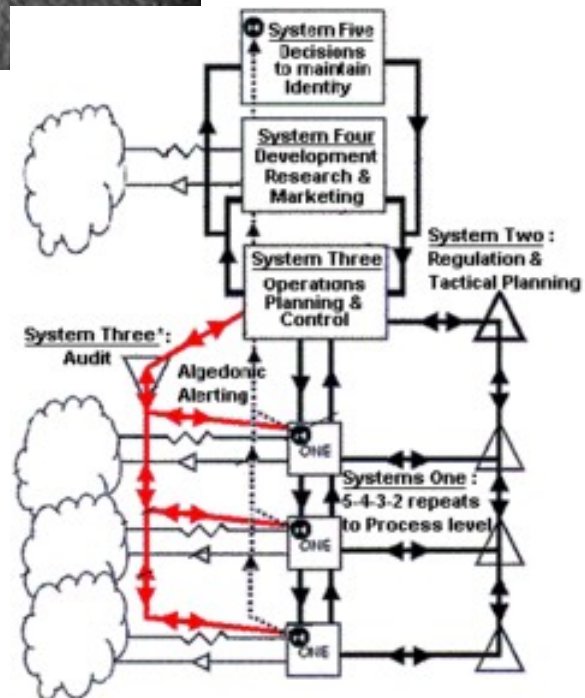
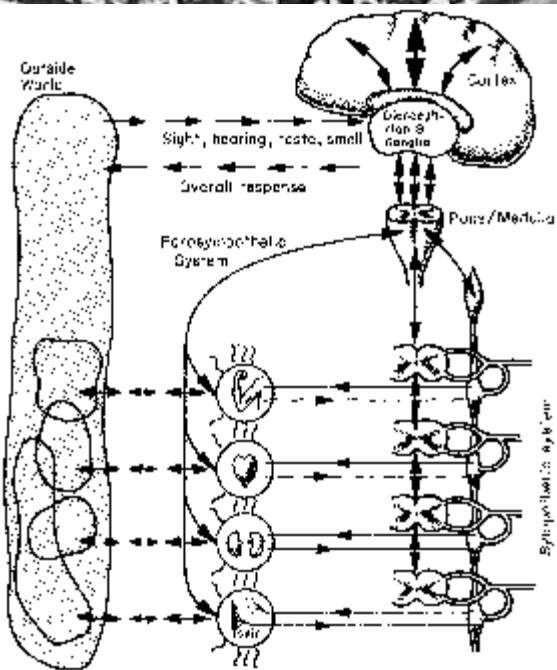
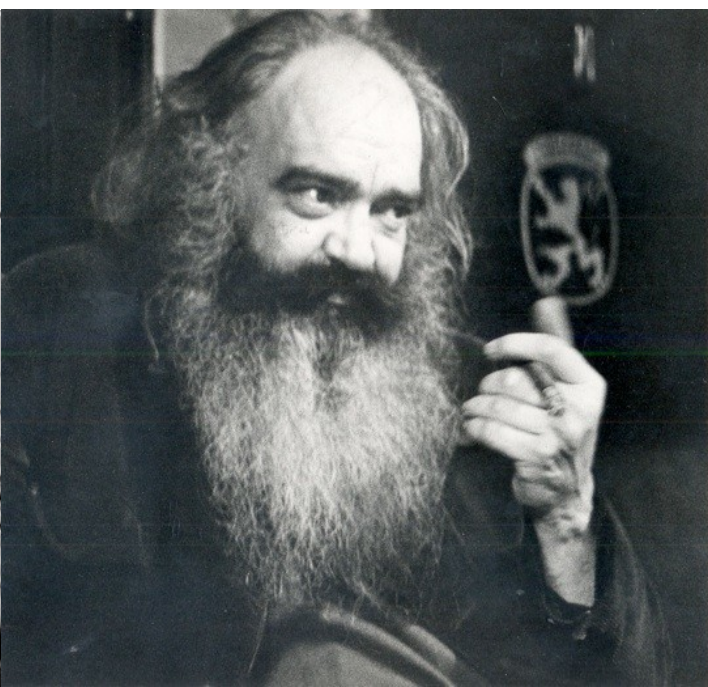
Werner Westermann J.

13th Open Education Conference

Richmond, Virginia 2016







question harmonization

RESEARCH CAPACITY

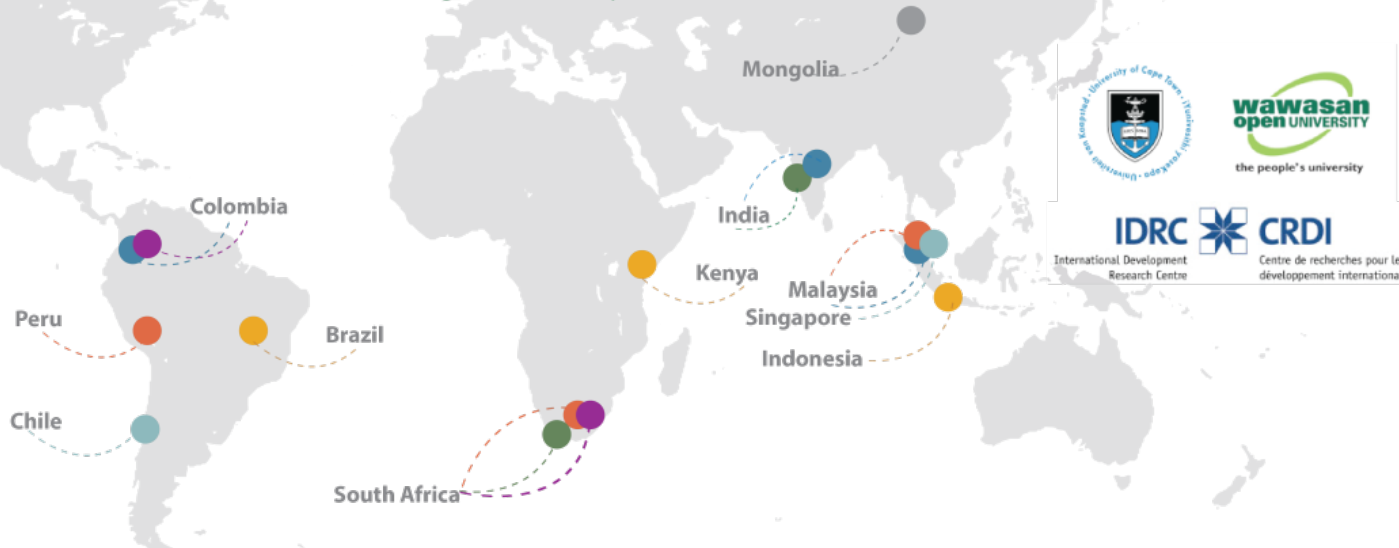
open data

Research on Open Educational Resources for Development in the Global South

GENERAL OBJECTIVE:

IMPROVE EDUCATIONAL POLICY, PRACTICE and RESEARCH in developing countries by better understanding the use and impact of OER

August 2013 - February 2017



EVALUATION

COMMUNICATION



PROJECT CLUSTERS



www.ROER4d.org

NETWORKING

Rationale

- OER Adoption looking to assess its Effectiveness
 - Student 1st year Outcomes (performance)
 - Very low retention (46%)
 - Lack of basic knowledge and academic skills
 - No prerequisite to enroll
 - Very low socio-demographic profile
- Mixed methodology approach
 - Quantitative
 - Qualitative
 - Focus groups with Students / Interview with teachers
 - Survey to students

Treatment

- Comparison of groups:
 - randomly assign students to the groups
 - same teacher for all groups in each scenario
 - alternatives to assure comparison
 - **Propensity Score Matching:** estimation of the probability of receiving an specific treatment
 - mechanism of comparison
 - **Inverse Probability Weight:** matching algorithm compare results of most similar individuals

**Scenario 1:
Contact mode**

School of Education
Course: Arithmetics (2nd Semester, 1st Year)
Teacher 1: Rebeca Parra

Control Group
(n=30)

Treatment Group 1
with Semi-open OER
(n=35)

Treatment Group 2
with More-open OER
(n=31)

Online Platform



Online/Printed
Open Textbook

**Scenario 2:
Contact mode**

School of Education
Course: Statistics (3rd Semester, 2nd Year)
Teacher 1: Rebeca Parra

Control Group
(n=30)

Treatment Group 2
with More-open OER
(n=31)



Online/Printed
Open Textbook

**Scenario 3:
Blended mode**

School of Engineering
Courses: Algebra (2nd Semester, 1st Year)
Calculus (3rd Semester, 2nd Year)
Teacher 2: Celso Soto

Control Group
(n=41)

Treatment Group
with OER
(n=21)

Online Platform



OER Selection

- Khan Academy
 - Extensive in resources and content
 - “Mentor” creates a “Course” selecting and sequencing resources to enrolled students (Remix)
- Open Textbook
 - Created by the teacher’s notes/resources
 - Hosted in Wikiboks
 - Printed copy from day 1

ALGEBRA (Clon)

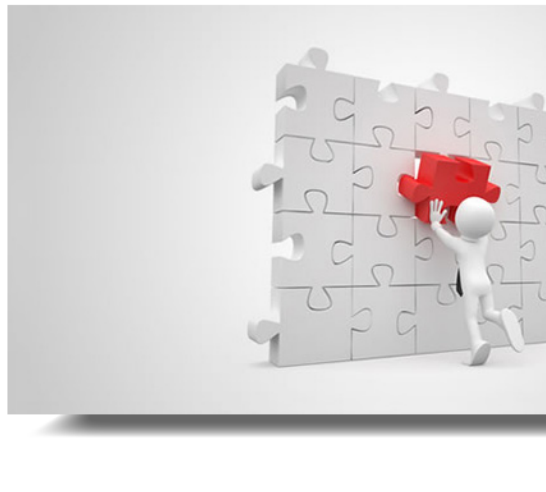
- ALGEBRA (Clon)
 - ✓ Evaluación de Saberes Previos
 - ✓ Mi Sala Virtual
- Instructivo Khan Academy
 - Introducción
 - Crear Cuenta Gmail
 - Primer Ingreso a Khan Academy
 - Interactuando en Khan Academy
- Módulo 0: Conocimientos Previos
 - Clase 1
 - Contenidos de la Clase 1
 - Más ejercicios y actividades
 - Números naturales
 - Números primos
 - El orden de las operaciones
 - Propiedades aritméticas
 - Clase 2
 - Clase 3
 - Clase 4
- Módulo 1: Conjuntos

ÁLGEBRA

NÚMEROS NATURALES

Números primos:

VER EN : KHANACADEMY



Conclusions

- students of the face to face classes that used a **semi-open OER** obtain significantly **better exam grades** than students:
 - that did not use any extra resource
 - that used an open textbook as an extra resource
- face-to-face students that used **semi open OER** have significantly **less attendance** levels than other examined students

Does it matter how open?

OER	Type of Open License	Level of Openness
Khan Academy	<i>Creative Commons Attribution-NonCommercial-ShareAlike 3.0 United States License (CC BY-NC-SA)</i>	Less open, “Quasi open” (1)
Open Textbook	<i>Creative Commons Attribution 4.0 International (CC BY)</i>	Most Open, “True open” (3)

- Policy: as much open as possible
- Pedagogy: what better suites learner/teacher
 - Where’s the crossover?

Does it matter how open?

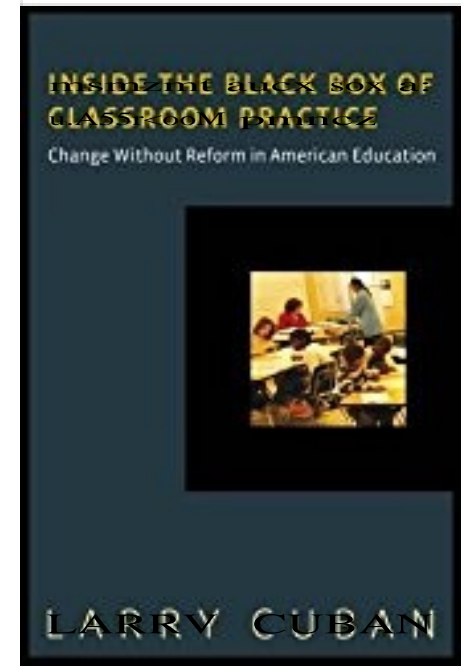
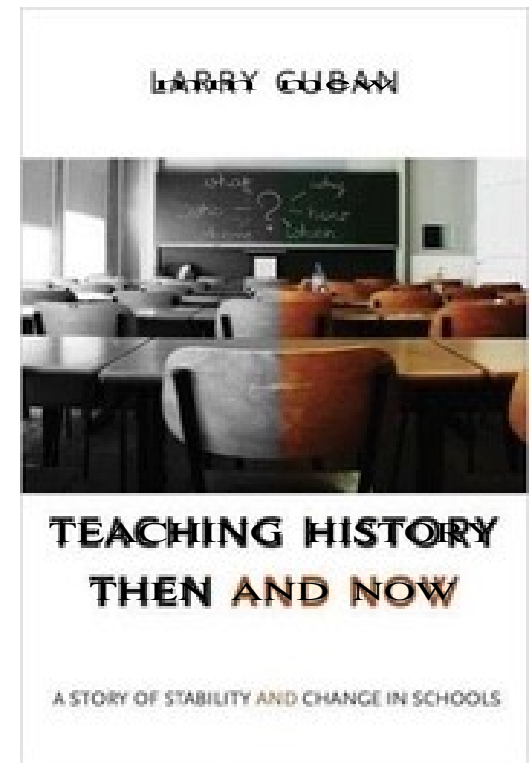
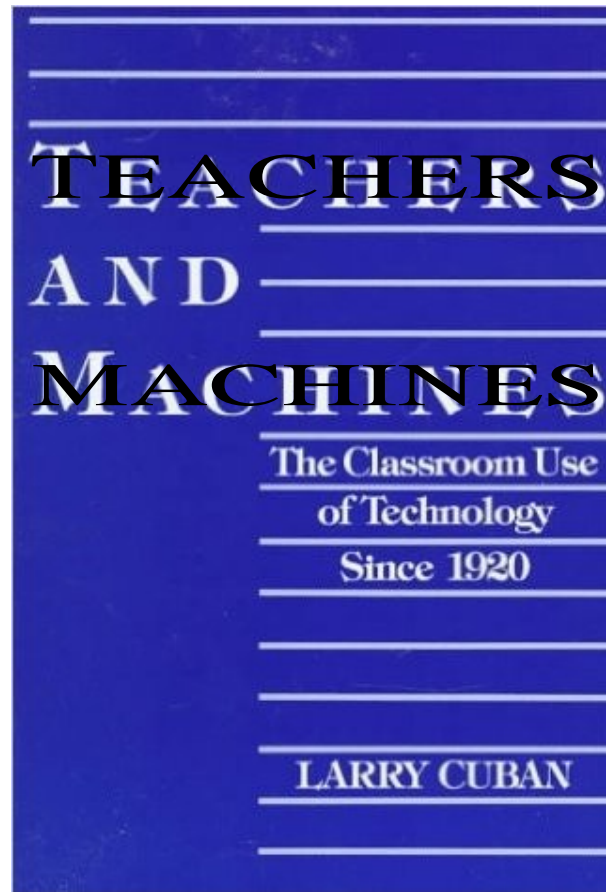
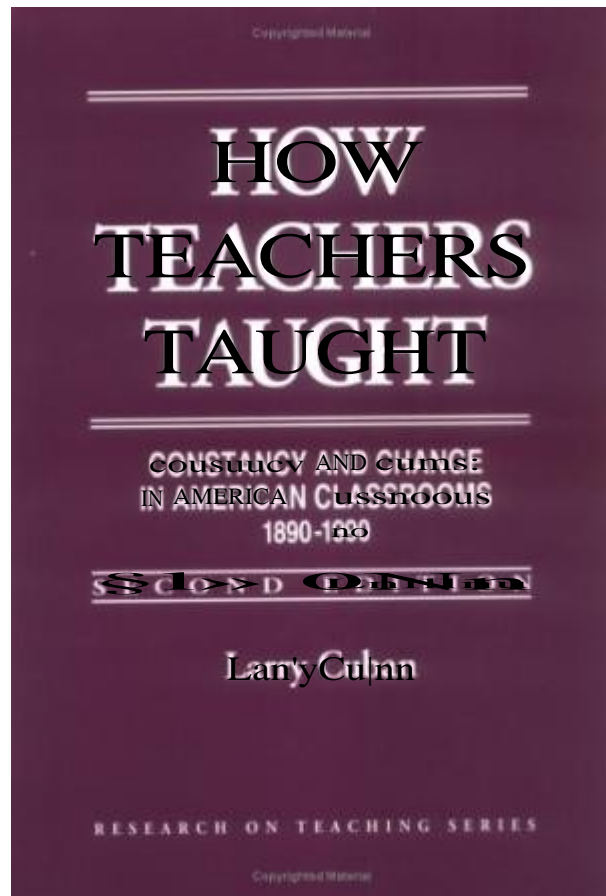
1 Level of Openness	(1) Free to use, but not modify; (2) Free to use, copy, distribute, modify, and incorporate into derivative noncommercial works; (3) Free to use, copy, distribute, modify, and incorporate into derivative works, including commercial works.*
2 Grain Size	Program/course sequence; whole course; unit of study; learning object; learning platform; assessment
3 Implementation Modality	Wholly online; blended with reduction in face-to-face (FtF) time; blended with no reduction in FtF time
4 Education Context	Early childhood; K-12 school; higher education institution; informal out-of-school
5 Learner Choice	Learner selected; recommended to learner; required of learner
6 Subject Area	Humanities, language arts, mathematics, science, technical including programming, other occupational
7 Type of Learning	Procedural skills; declarative knowledge; deeper learning

*These levels are a simplification of the four levels of OER access described in Smith, 2013.

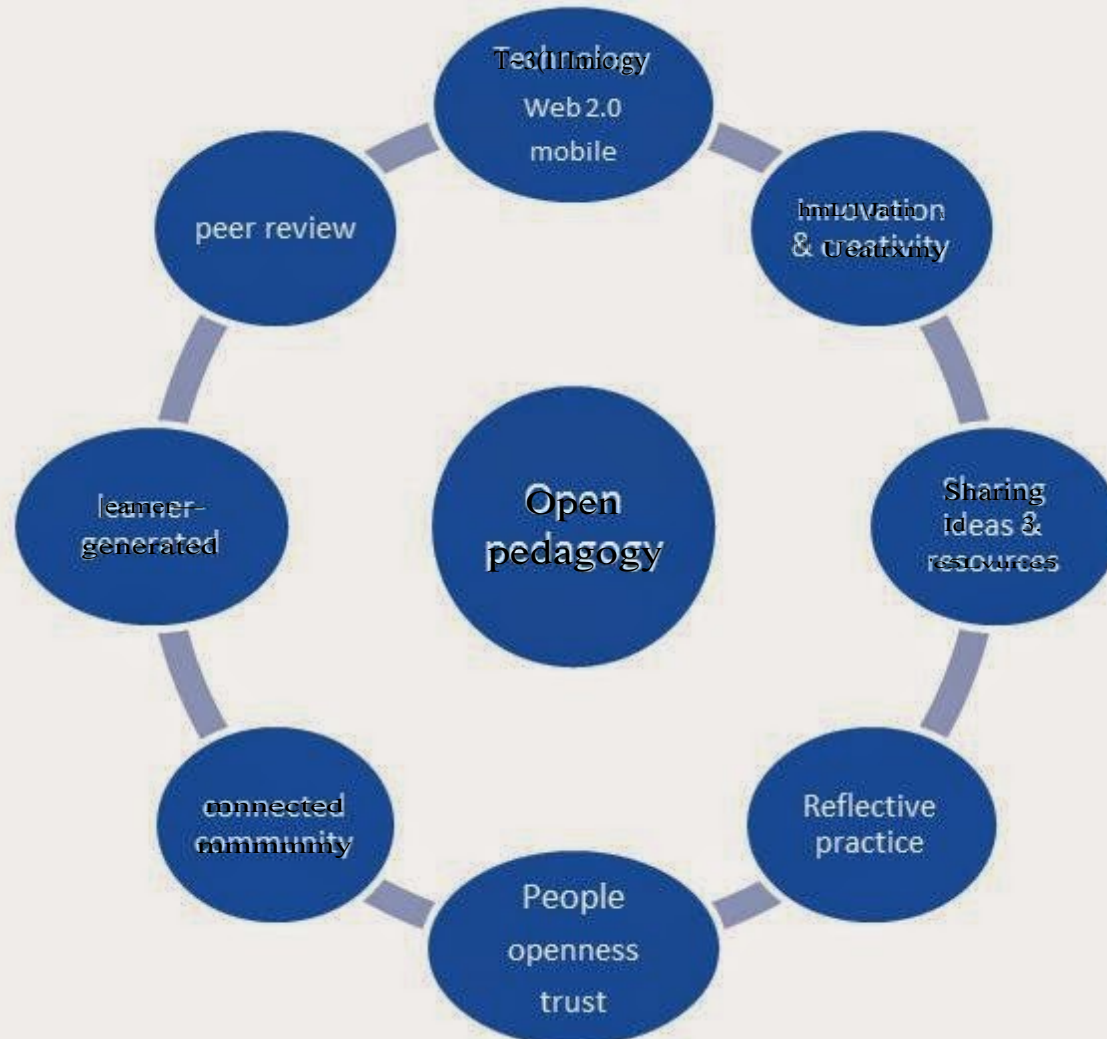
Does it matter how open?

- Kimmons, R. (2015), OER Quality and Adaptation in K-12: Comparing Teacher Evaluations of Copyright-Restricted, Open, and Open/Adapted Textbooks
 - open textbooks were of higher quality than copyright-restricted textbooks
 - open/adapted textbooks were evaluated as having the highest quality

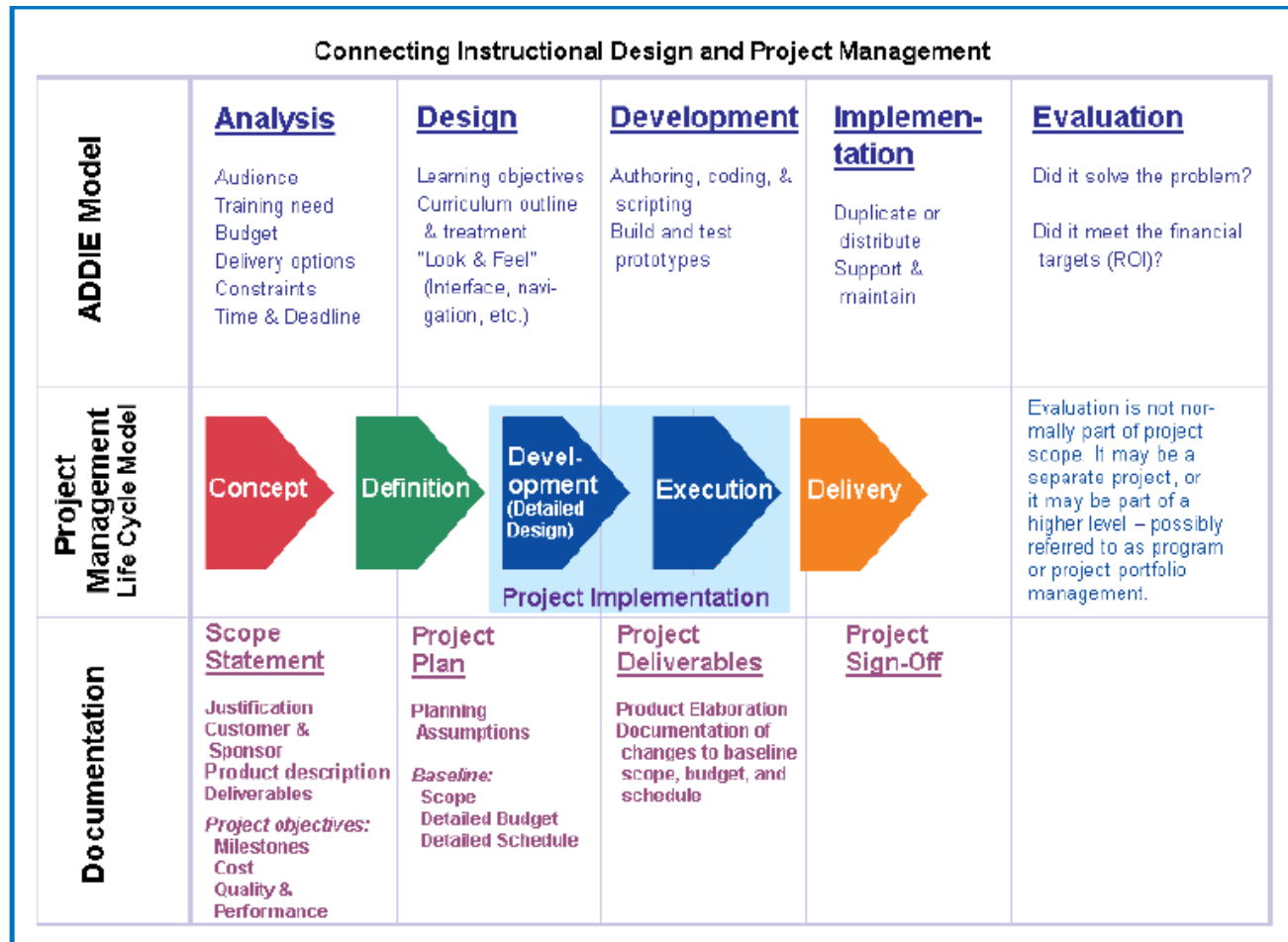
Larry Cuban



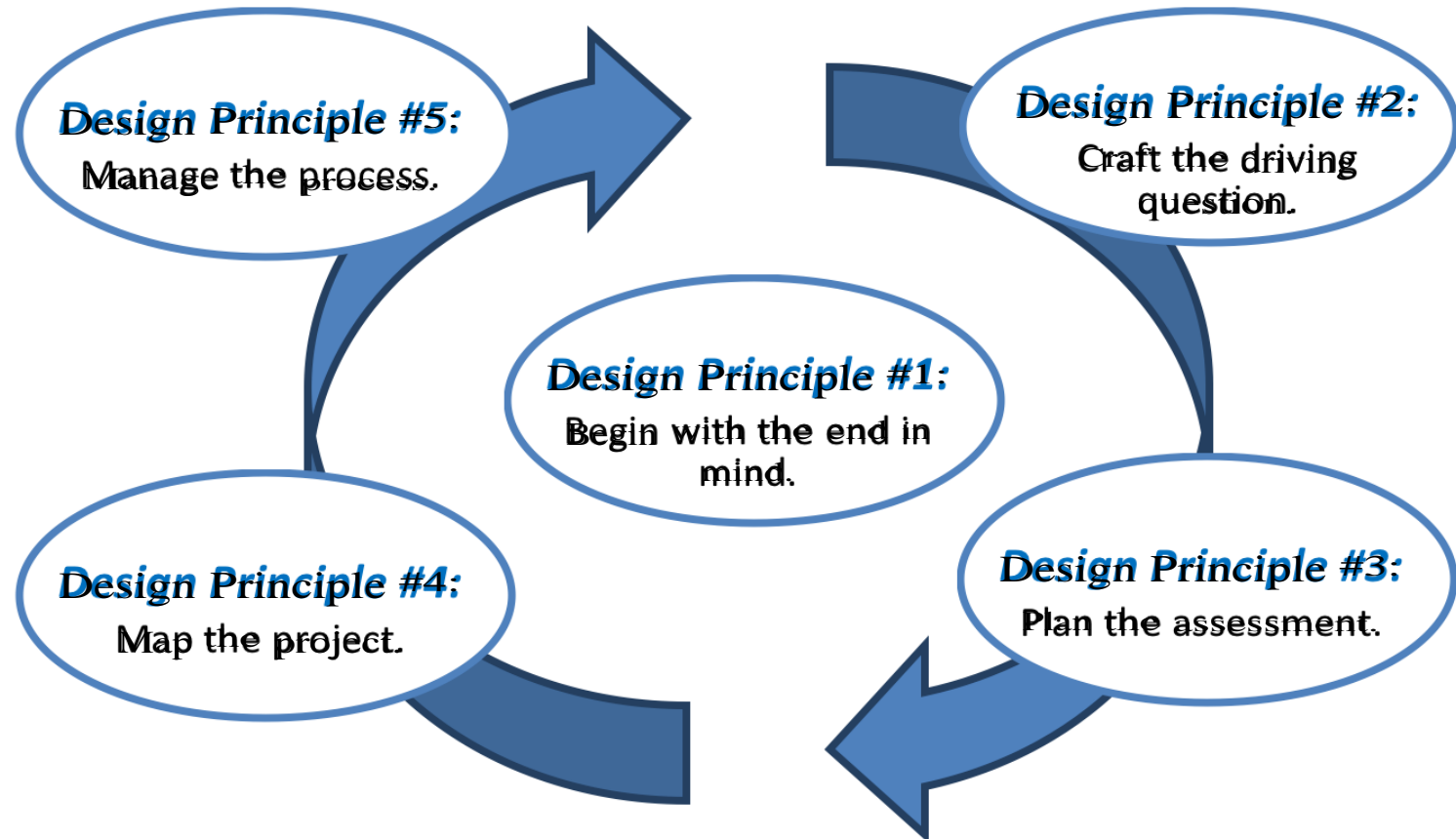
Hegarty, B. (2015), Attributes of Open Pedagogy: A model for using OER



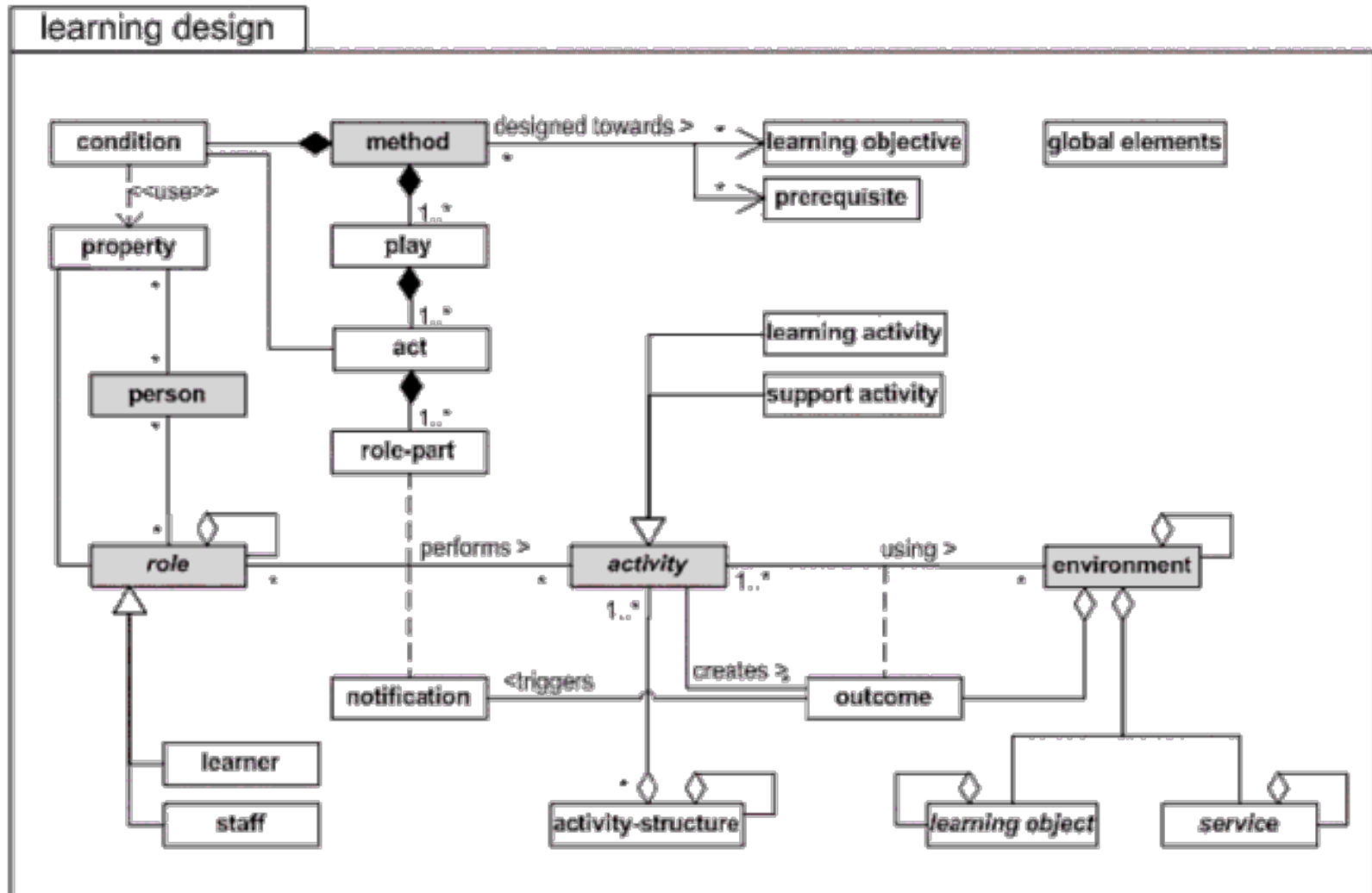
Project-based Learning



Design-based Learning



LOM Learning Design



Paulo Freire (1921-1997)



- Critical Pedagogy
 - Pedagogy of the Oppressed
 - Pedagogy for Liberation